JUN 2 1 2001

TECH CENTER 1600/2900 1652

RAW SEQUENCE LISTING

DATE: 05/21/2001 TIME: 09:50:59 PATENT APPLICATION: US/09/508,418

Input Set : A:\Q58140.txt

Output Set: N:\CRF3\05212001\I508418.raw



5 <120- TITLE OF INVENTION: NOVEL PROTOPORPHYRINOGEN OXIDASE TOLERANT TO PHOTOBLEACING HERBICIDE 7 <140- CURRENT APPLICATION NUMBER: 09/508,418 C> 10 <1415 CURRENT FILLING DATE: 2000-06-08 12 <150- PRIOR APPLICATION NUMBER: 07 9-265084 13 <151- PRIOR FILLING DATE: 1997-09-11 15 <160- NUMBER OF SEQ ID NOS: 11 17 <170- SOFTMARE: Patentin version 3.0 19 <210- SEQ ID No: 1 20 <211- LENCITH: 1874 21 <212- TYPE: DNA 22 <112- OXID- SEQ ID NO: 1 20 <211- LENCITH: 1874 21 <212- TYPE: DNA 22 <113- NAME/KEY: exon 25 <221- NAME/KEY: exon 26 <222- LOCATION: (26)(1672) 28 <200- FEATURE: 30 <223- OTHER INFORMATION: Strain name: Xanthi NC 33 <400- SEQUENCE: 1 34 aggoggdtd acaagtcag cagtc atg aca aca act ccc atc gcc aat cat 35	3 <110> APPLICANT: Nihon Nohyaku Co., Ltd.
9 <140> CURRENT APPLICATION NUMBER: 09/508,418 C-> 10 (415) CURRENT FILING DATE: 2000-60-08 12 <150> PRIOR APPLICATION NUMBER: JP 9-265084 13 <151> PRIOR FILING DATE: 1997-09-11 15 <160> NUMBER OF SEQ ID NOS: 11 17 <170> SOFTWARE: Patentin version 3.0 19 <210> SEQ ID NO: 1 20 <211> LENGTH: 1874 21 <212> TYPE: DNA 22 <213> ORGANISM: Nicotiana tabacum 44 <220> FEATURE: 25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agcgcggtct acaagtcagg cagtc atg aca aca act ccc atc gcc act act at 52 35	5 <120> TITLE OF INVENTION: NOVEL PROTOPORPHYRINOGEN OXIDASE TOLERANT TO PHOTOBLEACING HERBICIDE
C> 10 (141) CURRENT FILING DATE: 2000-06-08 1	7 <130> FILE REFERENCE: Q58140
12 <150> PRIOR PILING DATE: 1997-09-11 15 <160> NUMBER OF SEQ ID NOS: 11 17 <170> SOFTWARE: PatentIn version 3.0 19 <210> SEQ ID NO: 1 20 <211> LENGTH: 1874 21 <2122> TYPE: DNA 22 <213> ORGANISM: Nicotiana tabacum 4 <220> FEATURE: 25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 aggoggetch acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 35 Met Thr Thr Thr Pro 11e Ala Asn His 5 36 L 5 38 cct aat att ttc act cac cag tcg tcg tca tcg cca ttg gca ttc tta 100 39 Pro Asn 11e Phe Thr His Gln Ser Ser Ser Pro Leu Ala Phe Leu 40 10 15 Leu Ala Phe Leu 40 10 15 Leu Ala Phe Leu 41 Asn Arg Thr Ser Phe 11e Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 30 42 aca cgt act gg at gag aca gat gct cg tcc gtt gcc aca gcg act at gcc at act 30 43 Asn Arg Thr Ser Phe 11e Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 30 46 gtc aat tgc aat ggc tgg aga aca gca tcg tcg tcc gtt gcc aca gcg at act act 30 46 gtc act tgc act gg aga aca cag tcg tcc gtt gcc aca gcg tcc 196 47 Val Asn Cys Asn Gly Trp Arg Thr Arg Cys Ser Val Ala Lys Asp Tyr 50 50 aca gtt cct tcc tca gcg gtc gac gcg gcg gag ccg gcg gag ctg 244 51 Thr Val Pro Ser Ser Ala Val Asp Gly Gly Pro Ala Ala Glu Leu Asp 70 52 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Glu Leu Asp 70 53 Att gtt gtt ata gtt gag ca gga att agt gcc ct tcg att gcg cag gtg 55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 69 58 atg tcc gct aat tac cca att tcg atg gta aca gag gag aga gcg 340 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 100 60 90 95 100 105 61 Gga ggt gcc aca att aca aca gct tcc gct gct att tcg gaa 388 63 Ala Gly Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala 66 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	·
13 <151> PRIOR FILING DATE: 1997-09-11 15 <160> NUMBER OF SEQ ID NOS: 11 17 <170> SOFTWARE: Patentin version 3.0 19 <210> SEQ ID NO: 1 20 <211> LENGTH: 1874 21 <212> TYPE: DNA 22 <213> ORGANISM: Nicotiana tabacum 24 <220> FEATURE: 25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SBOUENCE: 1 34 agegeggtct accaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 35 Met Thr Thr Pro Ile Ala Asn His 1 36 ct aat att ttc act cac agt gc tg ta tg ca ttg gca ttg tta 1 39 Pro Asn Ile Phe Thr His Gln Ser Ser Ser Ser Pro Leu Ala Phe Leu 4 10 15 20 25 24 aca cgt acg agt tta atc cct ttc tct tca atc tcc aag cg cat atg 1 48 Asn Arg Thr Ser Phe Ile Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 4 40 35 Asn Arg Thr Ser Phe Ile Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 4 41 Asn Cys Asn Gly Trp Arg Thr Arg Cys Ser Val Ala Lys Asp Tyr 5 50 aca gtt cct tcc tca gcg gtc gac agc agc gga cc gcc gcg gag ctg gac 244 51 Thr Val Pro Ser Ser Ala Val Asp Gly Gly Pro Ala Ala Glu Leu Asp 5 50 54 tgt gtt ata gtt gga ga att agt ggc cc tcg att gc att gcg ag gg gg 2 55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Glu Leu Asp 5 50 6 atg tcc gtt att acc cc att gat gga ga ga cg ga gg	
15 < 160> NUMBER OF SEQ ID NOS: 11 17 < 170> SOFTMARE: PatentIn version 3.0 19 < 210> SEQ ID NO: 1 20 < 211> LENGTH: 1874 21 < 212> TYPE: DNA 22 < 213> ORGANISM: Nicotiana tabacum 24 < 220> FEATURE: 25 < 221> NAME/KEY: exon 26 < 222> LOCATION: (26)(1672) 28 < 220> FEATURE: 29 < 221> NAME/KEY: misc_feature 30 < 223> OTHER INFORMATION: Strain name: Xanthi NC 33 < 400> SEQUENCE: 1 34 aggogget acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35 Met Thr Thr Thr Pro 11e Ala Asn His 36 1 5 38 cct aat att ttc act cac cag tcg tcg tca tcg cca ttg gca ttc tta 39 Pro Asn 11e Phe Thr His Gln Ser Ser Ser Ser Ser Ser Pro Leu Ala Phe Leu 40 10 15 20 25 42 aca cgt acg agt ttc atc cct tt ctt tca atc tcc aag cgc aat agt 43 Asn Arg Thr Ser Phe Ile Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 44 30 35 46 gtc aat tgc act ggc tgg aga aca cga tgc tcc gcg gag ctg aga tac 47 Val Asn Cys Asn Gly Trp Arg Thr Arg Cys Ser Val Ala Lys Asp Tyr 48 45 50 55 50 aca gtt cct tca tc tca gcg cat aga cgt gac tg gac cg gcg gag ctg gac 51 Thr Val Pro Ser Ser Ala Val Asp Gly Gly Pro Ala Ala Glu Leu Asp 52 50 ys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Glu Leu Asp 53 65 54 tgt gtt ata gtt gga gca gat att agg ctc tcg ga gag ac tg ga 55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 56 75 80 85 57 80 85 58 atg tcc gct aat tac cca cat ttg atg ga acc gag gcg aga gct ga 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aca ata acq act gtg gaa aga gcg tat ttt ttg gg gaa 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 65 gag ggt ccc acc agt ttc cgat cct att gcg act att gcg 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Aser Ala Lug Lug Thr Met Ala 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Aser Cat act gat cat gcg act cat gcg 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Aser Of Thr Met Ala	
17 < 170> SOFTWARE: PatentIn version 3.0 19 < 201> SEO ID NO: 1 20 < 211> LENGTH: 1874 21 < 212> TYPE: DNA 22 < 213> ORGANISM: Nicotiana tabacum 24 < 220> FEATURE: 25 < 221> NAME/KEY: exon 26 < 222> LOCATION: (26)(1672) 28 < 220> FEATURE: 29 < 221> NAME/KEY: misc_feature 30 < 223> OTHER INFORMATION: Strain name: Xanthi NC 33 < 400> SEQUENCE: 1 34 agcgcggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 35	
19 <210> SEQ ID NO: 1 20 <211> LENGTH: 1874 21 <212> TYPE: DNA 22 <213> ORGANISM: Nicotiana tabacum 24 <220> FEATURE: 25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agggeggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 35	
20 <211> LENGTH: 1874 21 <212> TYPE: DNA 22 <213> ORGANISM: Nicotiana tabacum 24 <220> FEATURE: 25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> COATION: (26)(1672) 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 30 <400> SEQUENCE: 1 34 aggggggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 5	
21 <212 TYPE: DNA 22 <213> ORGANISM: Nicotiana tabacum 24 <220> FEATURE: 25 <221> NAMME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agegoggtct aceagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 35	
22 <213 ORGANISM: Nicotiana tabacum 24 <220> FEATURE: 25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <200> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agggggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35	
24 <220> FRATURE: 25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FRATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 aggcgggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35	
25 <221> NAME/KEY: exon 26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agogcggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35 Met Thr Thr Thr Pro Ile Ala Asn His 36 1	
26 <222> LOCATION: (26)(1672) 28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agcgcggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35	
28 <220> FEATURE: 29 <221> NAME/KEY: misc_feature 30 <223> O'THER INNORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agogogytct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35	·
29 <221> NAME/KEY: misc_feature 30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 aggggggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 35	
30 <223> OTHER INFORMATION: Strain name: Xanthi NC 33 <400> SEQUENCE: 1 34 agcgcggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35	
33 <400> SEQUENCE: 1 34 aggggggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 35	
34 agggggtct acaagtcagg cagtc atg aca aca act ccc atc gcc aat cat 52 35	
Met Thr Thr Thr Pro Ile Ala Asn His 36 1	
36 38 cct aat att tte act cac cag tcg tcg tcg tca tcg cca ttg gca ttc tta 39 Pro Asn Ile Phe Thr His Gln Ser Ser Ser Ser Pro Leu Ala Phe Leu 40 10	
39 Pro Asn Ile Phe Thr His Gin Ser Ser Ser Ser Pro Leu Ala Phe Leu 40 10 15 20 25 42 aac cgt acg agt ttc atc cct ttc tct tca atc tcc aag cgc aat agt 148 43 Asn Arg Thr Ser Phe Ile Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 44 30 30 35 40 46 gtc aat tgc aat ggc tgg aga aca cga tgc tcc gtt gcc aaa gat tac 196 47 Val Asn Cys Asn Gly Trp Arg Thr Arg Cys Ser Val Ala Lys Asp Tyr 48 45 50 aca gtt cct tcc tca gcg gtc gac ggc gga ccc gcg gag ctg gac ctg gac 244 51 Thr Val Pro Ser Ser Ala Val Asp Gly Gly Pro Ala Ala Glu Leu Asp 52 65 52 cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 56 58 atg tcc gct aat tac ccc aat ttg atg gac ag gac ag ggc ga gac ggc gag gac gac	
40 10	38 cct aat att tte act cae cag teg teg tea teg eea ttg gea tte tta 100
42 aac cgt acg agt ttc atc cct ttc tct tca atc tcc aag cgc aat agt 43 Asn Arg Thr Ser Phe Ile Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 44	39 Pro Asn Ile Phe Thr His Gln Ser Ser Ser Pro Leu Ala Phe Leu
43 Asn Arg Thr Ser Phe Ile Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser 44 30 46 gtc aat tgc aat ggc tgg aga aca cga tgc tcc gtt gcc aaa gat tac 47 Val Asn Cys Asn Gly Trp Arg Thr Arg Cys Ser Val Ala Lys Asp Tyr 48 45 50 aca gtt cct tcc tca gcg gtc gac ggc ggc ggc ggc ggc ggc ggc ggc gg	40 10 . 15 20 25
44	42 aac cgt acg agt tte ate eet tte tet tea ate tee aag ege aat agt 148
46 gtc aat tgc aat ggc tgg aga aca cga tgc tcc gtt gcc aaa gat tac 47 Val Asn Cys Asn Gly Trp Arg Thr Arg Cys Ser Val Ala Lys Asp Tyr 48	43 Asn Arg Thr Ser Phe Ile Pro Phe Ser Ser Ile Ser Lys Arg Asn Ser
47 Val Asn Cys Asn Gly Trp Arg Thr Arg Cys Ser Val Ala Lys Asp Tyr 48	
48	
50 aca gtt cct tcc tca gcg gtc gac ggc gga ccc gcc gcg gag ctg gac 244 51 Thr Val Pro Ser Ser Ala Val Asp Gly Gly Pro Ala Ala Glu Leu Asp 52 60 65 70 54 tgt gtt ata gtt gga gca gga att agt ggc ctc tgc att gcg cag gtg 292 55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 56 75 80 85 58 atg tcc gct aat tac ccc aat ttg atg gta acc gag gcg aga gat cgt 340 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
51 Thr Val Pro Ser Ser Ala Val Asp Gly Gly Pro Ala Ala Glu Leu Asp 52 60 65 70 54 tgt gtt ata gtt gga gca gga att agt ggc ctc tgc att gcg cag gtg 55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 56 75 80 85 58 atg tcc gct aat tac ccc aat ttg atg gta acc gag gcg aga gat cgt 340 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
52 60 65 70 54 tgt gtt ata gtt gga gca gga att agt ggc ctc tgc att gcg cag gtg 55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 56 75 80 85 58 atg tcc gct aat tac ccc aat ttg atg gta acc gag gcg aga gat cgt 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
54 tgt gtt ata gtt gga gca gga att agt ggc ctc tgc att gcg cag gtg 55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 56 75 80 85 58 atg tcc gct aat tac ccc aat ttg atg gta acc gag gcg aga gat cgt 340 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
55 Cys Val Ile Val Gly Ala Gly Ile Ser Gly Leu Cys Ile Ala Gln Val 56 75 80 85 58 atg tcc gct aat tac ccc aat ttg atg gta acc gag gcg aga gat cgt 340 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
56 75 80 85 58 atg tcc gct aat tac ccc aat ttg atg gta acc gag gcg aga gat cgt 340 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
58 atg tcc gct aat tac ccc aat ttg atg gta acc gag gcg aga gat cgt 59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
59 Met Ser Ala Asn Tyr Pro Asn Leu Met Val Thr Glu Ala Arg Asp Arg 60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
60 90 95 100 105 62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
62 gcc ggt ggc aac ata acg act gtg gaa aga gac ggc tat ttg tgg gaa 388 63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
63 Ala Gly Gly Asn Ile Thr Thr Val Glu Arg Asp Gly Tyr Leu Trp Glu 64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
64 110 115 120 66 gaa ggt ccc aac agt ttc cag ccg tcc gat cct atg ttg act atg gca 436 67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala	
•	66 gaa ggt eee aac agt tte eag eeg tee gat eet atg ttg act atg gea 436
68 125 130 135	67 Glu Gly Pro Asn Ser Phe Gln Pro Ser Asp Pro Met Leu Thr Met Ala
	68 125 130 135

RAW SEQUENCE LISTING

DATE: 05/21/2001 TIME: 09:50:59

PATENT APPLICATION: US/09/508,418

Input Set : A:\Q58140.txt Output Set: N:\CRF3\05212001\I508418.raw

70	gta	gat	tgt	gga	ttg	aag	gat	gat	ttg	gtg	ttg	gga	gat	cct	aat	gcg	484
	Val	Asp		Gly	Leu	Lys	Asp	Asp	Leu	Val	Leu	Gly	Asp 150	Pro	Asn	Ala	
72	ccc	cat	140	att	tta	taa	ааσ		aaa	tta	agg	CCC		CCC	tica	aaa	532
75	Pro	Ara	Phe	Val	Leu	Trp	Lvs	Glv	Lys	Leu	Arg	Pro	Val	Pro	Ser	Lys	• • •
76		155					160					165					
78	ctc	act	gat	ctt	ccc	ttt.	ttt	gat	ttg	atg	agc	att	cct	ggc	aag	ttg	580
	Leu	Thr	Asp	Leu	Pro		Phe	Asp	Leu	Met		Ile	Pro	Gly	Lys		;
	170					175	.++	~~~	a+ a	~~~	180	+ 02	aat	002	aat	185	628
82	aga Arg	gct Ala	ggt	Dha	ggt	Pro	att Tlo	Glv	Leu	Δra	Pro	Ser	Pro	Pro	GI v	His	020
84		нта	СТУ	FILE	190	FIO	116	GIY	пец	195	110	CCI	110	110	200	1120	
	gag	gaa	tca	gtt		cag	ttc	gtg	cgt	cgt	aat	ctt	ggt	ggc	gaa	gtc	676
87	Ğlu	Glu	Ser	Val	Glu	Gln	Phe	Val	Arg	Arg	Asn	Leu	Gly	Gly	Glu	Val	•
88				205					210					215			5 0.4
90	ttt	gaa	cgc	ttg	ata	gaa	cca	ttt	tgt	tct	ggt.	gtt	tat	gct	ggt	gat	724
	Phe	GLu	Arg 220	Leu	TTE	Glu	Pro	225	Cys	ser	GIY	vaı	230	Ата	GIY	ASP	
92	ccc	tca		cta	agt	atα	aaa		σса	ttt	aaa	aaa		taa	aaσ	tta	772
95	Pro	Ser	Lys	Leu	Ser	Met	Lys	Ala	Ala	Phe	Gly	Lys	Val	Trp	Lys	Leu	
96		235					240				_	245					
98	gaa	gaa	act	ggt	ggt	agc	att	att	gga	gga	acc	ttt	aaa	gca	ata	aag	820
	Glu		Thr	Gly	Gly			Ile	Gly	Gly			ГЛЗ	Ala	Ile		
	0 250 2 gaq					255		~~			260		· ~~+	. ++>	act	265	868
10	2 gaq 3 Gl	g aga	T CO	c agu	aca Thi	r Pro	Lvs	. gcc	Pro	Arc	yat Asr	. Co	o Arc	. Leu	i Pro	LVS	000
10		1 1119	, 50.	. JCI	270		27.5	113.0	• • • •	275			:	,	280		
10	6 cc	a aaa	a gga	a cag	aca	gtt	gga	tca	tto	agg	g aag	ggt	t cto	aga	atg	ctg	916
10	7 Pro	Lys	Gly	y Glr	Thi	. Val	Gly	Ser			j Lys	Gly	, Lei			: Leu	
10				285					290					295			964
	0 cc																904
11	.1 Pro) AS	300		. 261	. Ата	Ary	305	-	, ser	. шуз	, пе	310		ı ber	111	
	4 aa	r ctt			att	act	aaq			a aaa	gga	ı gga			ttg	aca	1012
11	5 Ly:	s Leu	ı Sei	r Ser	· Ile	e Thr	Lys	Ser	. Ğlı	ı Lys	Gly	Gly	у Туг	His	Leu	Thr	
11		315					320					32	-				
11	.8 ta	gag	j aca	a cca	gaa	a gga	gta	gtt	tct.	ctt	caa	ag!	t cga	ago	att	gtc	1060
	9 Ty:		ı Thi	r Pro	GIU	1 GLY 335		. Val	. Ser	Leu	340		c Arg	, ser	. 116	345	
	0 330 2 ate		- ata	7 008	too			aca	ago	r aac			a cat	. cct	ctt		1108
12	3 Me	t Thr	· Va	l Pro	Sei	Tvr	Val	Ala	Sei	Asn	11e	Lei	ı Arc	Pro	Leu	Ser	
12					350					355					360		
12	6 gt	t ged	gea	a gca	gat	gca	ctt	. tca	aat	tto	tac	tat	t ccc	cca	ı gtt	gga	1156
	7 Va.	l Ala	a Ala			Ala	Leu	Ser			э Туг	ТУ	r Pro			. Gly	
12				365					370		+	- 00		375		cta	1204
13 13	0 gca	a gto	; aC∂ □ The	a dtt r Tle	. CCa	r tat	Pro	. caa	ı gat ı Gli	ı yet ı Ala	. all	. Cyi	u yat JAST	. yay o Glu	, cyt	. CLy	1204
13		. val	380		. 561	. <u></u> .	110	385				****	390		5	,	
	4 gti	. gat			cta	ı aag	gga			g cag	, ttg	r cat	t cca	cgt	aca	cag	1252
	-	-		-		_	-							*			

RAW SEQUENCE LISTING DATE: 05/21/2001 PATENT APPLICATION: US/09/508,418 TIME: 09:50:59

Input Set : A:\Q58140.txt
Output Set: N:\CRF3\05212001\I508418.raw

135 136	Val	Asp 395	Gly	Glu	Leu	Lys	Gly 400	Phe	Gly	Gln	Leu	His 405	Pro	Arg	Thr	Gln	
	gga	gtg	αаа	aca	cta	ααa		ata	tat	ant	t ca		ctc	ttc	cct	220	1300
		Val	-				_			-							1300
	410	741	Olu	1111	пец	415	1111	110	1 Y 1	Det	420	261	шеu	FIIC	FIO	425	
		gcc	002	222	aat		ata	ot a	ata	++~		+ 20	2++	003	aa 2		1348
																	1340
144	Arg	Ala	PLO	пуз	430	ALG	var	Leu	ьец	435	ASII	TYL	ite	GIY	440	Ala	
	222	22+	aa+	~~~		++~		224				~~~		~+~			1206
		aat															1396
147	цуѕ	Asn	PIO	445	шe	ьеи	ser	цуѕ		GIU	ser	GIII	Leu		GIU	vai	
	~	~~+	~~+		_4_				450					455			1444
		gat															1444
	val	Asp		Asp	ьeu	Arg	гàг		Leu	тте	гăг	Pro		Ala	GIn	Asp	
152			460					465					470				1.400
		ctt															1492
	Pro	Leu	Val	Val	GIY	Val	_	Val	Trp	Pro	GIn		He	Pro	GIn	Phe	
156		475					480					485					
		gtt															1540
		Val	Gly	His	Leu	_	Thr	Leu	Ser	Thr		Lys	Ala	Ala	Met		
	490					495					500					505	
162	gat	aat	ggg	ctt	gaa	ggg	ctg	ttt	ctt	ggg	ggt	aat	tat	gtg	tca	ggt	1588
	Asp	Asn	Gly	Leu		Gly	Leu	Phe	Leu	Gly	Gly	Asn	Tyr	Val	Ser	Gly	
164					510					515					520		
		gca															1636
	Val	Ala	Leu	Gly	Arg	Cys	Val	Glu	Gly	Ala	Tyr	Glu	Val	Ala	Ser	Glu	
168				525					530					535			
170	gta	aca	gga	ttt	ctg	tct	cgg	tat	gca	tac	aaa	tga	aaco	ctgtg	jtt		1682
171	Val	Thr	Gly	Phe	Leu	Ser	Arg	Tyr	Ala	Tyr	Lys						
172			540					545									
174	gggg	ggtag	rtc d	caaac	ctt	gt ta	gtag	gtace	g ato	catgo	ctt	ggga	aaat	tg 🤉	gcate	gtgcct	1742
176	aaaa	igttt	tg d	ctcat	taga	ig tt	attt	tago	ctt	ggta	ıaat	gatt	tgta	ict t	gata	itcagt	1802
178	cgtt	ttct	tt 🤇	gagat	aaaa	at gt	tcct	gtto	agg	jaaat	ata	atgt	atat	ca a	atttt	caaaca	1862
180	aaaa	aaaa	aa a	aa													1874
183	<210)> SE	Q II	NO:	2												
184	<211	L> LE	NGTE	I: 54	8												
185	<212	2> TY	PE:	PRT													
186	<213	3> OF	GAN1	SM:	Nico	otian	na ta	ıbacı	ım								
188	<220)> FE	ATUF	RE:													
189	<221	> NA	ME/F	EY:	misc	_fea	ture)									
190	<223	3> OI	HER	INFO	RMAT	ON:	Str	ain	name	: SR	1						
193	<400)> SE	QUEN	ICE:	2												
195	Met	Thr	Thr	Thr	Pro	Ile	Ala	Asn	His	Pro	Asn	Ile	Phe	Thr	His	Gln	
196					5 ·					10					15		
198	Ser	Ser	Ser	Ser	Pro	Leu	Ala	Phe	Leu	Asn	Arg	Thr	Ser	Phe	Ile	Pro	
199				20					25		-			30			
201	Phe	Ser	Ser	Ile	Ser	Lys	Arg	Asn	Ser	Val	Asn	Cys	Asn	Gly	Trp	Arg	
202			35			-	_	40				•	45	-	-	-	
204	Thr	Arg	Cys	Ser	Val	Ala	Lys	Asp	Tyr	Thr	Val	Pro	Ser	Ser	Ala	Val	
205		50	-				55	•	•			60					
												-					

RAW SEQUENCE LISTING

DATE: 05/21/2001 TIME: 09:50:59

PATENT APPLICATION: US/09/508,418

Input Set : A:\Q58140.txt
Output Set: N:\CRF3\05212001\I508418.raw

207 Asp Gly Gly Pro Ala Ala Glu Leu Asp Cys Val Ile Val Gly Ala Gly 210 Ile Ser Gly Leu Cys Ile Ala Gln Val Met Ser Ala Asn Tyr Pro Asn 213 Leu Met Val Thr Glu Ala Arg Asp Arg Ala Gly Gly Asn Ile Thr Thr 216 Val Glu Arg Asp Gly Tyr Leu Trp Glu Glu Gly Pro Asn Ser Phe Gln 219 Pro Ser Asp Pro Met Leu Thr Met Ala Val Asp Cys Gly Leu Lys Asp 222 Asp Leu Val Leu Gly Asp Pro Asn Ala Pro Arg Phe Val Leu Trp Lys 223 145 225 Gly Lys Leu Arg Pro Val Pro Ser Lys Leu Thr Asp Leu Pro Phe Phe 228 Asp Leu Met Ser Ile Pro Gly Lys Leu Arg Ala Gly Phe Gly Pro Ile 231 Gly Leu Arg Pro Ser Pro Pro Gly His Glu Glu Ser Val Glu Gln Phe 234 Val Arg Arg Asn Leu Gly Gly Glu Val Phe Glu Arg Leu Ile Glu Pro 235 210 237 Phe Cys Ser Gly Val Tyr Val Gly Asp Pro Ser Lys Leu Ser Met Lys 240 Ala Ala Phe Gly Lys Val Trp Lys Leu Glu Glu Thr Gly Gly Ser Ile 243 Ile Gly Gly Thr Phe Lys Ala Ile Lys Glu Arg Ser Ser Thr Pro Lys 246 Ala Pro Arg Asp Pro Arg Leu Pro Lys Pro Lys Gly Gln Thr Val Gly 249 Ser Phe Arg Lys Gly Leu Arg Met Leu Pro Asp Ala Ile Ser Ala Arg 252 Leu Gly Ser Lys Leu Lys Leu Ser Trp Lys Leu Ser Ser Ile Thr Lys 253 305 255 Ser Glu Lys Gly Gly Tyr His Leu Thr Tyr Glu Thr Pro Glu Gly Val 258 Val Ser Leu Gln Ser Arg Ser Ile Val Met Thr Val Pro Ser Tyr Val 261 Ala Ser Asn Ile Leu Arg Pro Leu Ser Val Ala Ala Ala Asp Ala Leu 264 Ser Asn Phe Tyr Tyr Pro Pro Val Gly Ala Val Thr Ile Ser Tyr Pro 267 Gln Glu Ala Ile Arg Asp Glu Arg Leu Val Asp Gly Glu Leu Lys Gly 270 Phe Gly Gln Leu His Pro Arg Thr Gln Gly Val Glu Thr Leu Gly Thr 273 Ile Tyr Ser Ser Ser Leu Phe Pro Asn Arg Ala Pro Lys Gly Arg Val 276 Leu Leu Leu Asn Tyr Ile Gly Gly Ala Lys Asn Pro Glu Ile Leu Ser 279 Lys Thr Glu Ser Gln Leu Val Glu Val Asp Arg Asp Leu Arg Lys

RAW SEQUENCE LISTING DATE: 05/21/2001 PATENT APPLICATION: US/09/508,418 TIME: 09:50:59

Input Set : A:\Q58140.txt

Output Set: N:\CRF3\05212001\1508418.raw

280		450					455					460					
282	Met	Leu	Ile	Lys	Pro	Lys	Ala	Gln	Asp	Pro	Leu	Val	Val	Gly	Val		
	465					470					475					480	
285	Val	Trp	Pro	Gln	Ala	Ile	Pro	Gln	Phe	Leu	Val	Gly	His	Leu	Asp	Thr	
286		_			485					490					495		
288	Leu	Ser	Thr	Ala	Lys	Ala	Ala	Met	Asn	Asp	Asn	Gly	Leu	Glu	Gly	Leu	
289				500	-4 -				505	•		-		510			
	Dhe	T.eu	Glv		Asn	Tur	Val	Ser	Glv	Va1	Ala	Leu	Glv	Arq	Cys	Val	
292	rne	шеч	515	U-1		-1-		520	1		•		525		- 1		
	<i>~</i> 1	Cirr		Ф	Clu	W = 1	λla		Glu	Va 1	Thr	G1 v		Leu	Ser	Arσ	
	GIU	530	ALG	тут	GIU	Vai	535	Jei	Gra	· u ı	1111	540	1	Dou	501	9	
295	m		Шили	T			232					340					
	Tyr	Ald	Tyr	пĀЗ													
	545				_												
) NO													
				H: 18	374												
	<212																
303	<213	3> 01	RGAN.	ESM:	Nico	otian	na ta	ibacı	ım								
305	<220)> F	EATUI	RE:													
306	<222	1> N	AME/I	KEY:	exor	1											
307	<222	2> LO	CAT:	ON:	(26)) (2	1672)									
309	<220)> F1	EATUI	RE:							•						
310	<22	1> N	AME/I	KEY:	misc	_fea	ature	≥									
311	<223	3> O	CHER	INF	ORMAT	CION	: Sti	ain	name	e: SI	31						
				ICE:													
						a ca	agto	atq	aca	aca	act	ccc	atc	qcc	aat	cat	52
		, - , , ,															
316							_										
316							,	Met							Asn		
317	cct	aat						Met 1	Thr	Thr	Thr	Pro 5	Ile	Ala	Asn	His	100
317 319	cct	aat	att	ttc	act	cac	cag	Met 1 tcg	Thr	Thr	Thr	Pro 5 cca	Ile ttg	Ala	Asn	His tta	100
317 319 320	Pro	aat Asn	att	ttc	act	cac His	cag	Met 1 tcg	Thr	Thr	Thr tcg Ser	Pro 5 cca	Ile ttg	Ala	Asn	His tta Leu	100
317 319 320 321	Pro 10	Asn	att Ile	ttc Phe	act Thr	cac His	cag Gln	Met 1 tcg Ser	Thr tcg Ser	Thr tca Ser	tcg Ser 20	Pro 5 cca Pro	Ile ttg Leu	Ala gca Ala	Asn ttc Phe	His tta Leu 25	
317 319 320 321 323	Pro 10 aac	Asn cgt	att Ile acg	ttc Phe agt	act Thr ttc	cac His 15	cag Gln cct	Met 1 tcg Ser ttc	Thr tcg Ser tct	Thr tca Ser tca	tcg Ser 20 atc	Pro 5 cca Pro	Ile ttg Leu aag	Ala gca Ala cgc	Asn ttc Phe aat	tta Leu 25 agt	100
317 319 320 321 323 324	Pro 10 aac	Asn cgt	att Ile acg	ttc Phe agt	act Thr ttc Phe	cac His 15	cag Gln cct	Met 1 tcg Ser ttc	Thr tcg Ser tct	Thr tca Ser tca Ser	tcg Ser 20 atc	Pro 5 cca Pro	Ile ttg Leu aag	Ala gca Ala cgc	Asn ttc Phe aat Asn	tta Leu 25 agt	
317 319 320 321 323 324 325	Pro 10 aac Asn	Asn cgt Arg	att Ile acg Thr	ttc Phe agt Ser	act Thr ttc Phe 30	cac His 15 atc Ile	cag Gln cct Pro	Met 1 tcg Ser ttc Phe	tcg Ser tct Ser	Thr tca Ser tca Ser 35	tcg Ser 20 atc	Pro 5 cca Pro tcc Ser	Ile ttg Leu aag Lys	Ala gca Ala cgc Arg	Asn ttc Phe aat Asn 40	tta Leu 25 agt Ser	. 148
317 319 320 321 323 324 325 327	Pro 10 aac Asn gtc	Asn cgt Arg aat	att Ile acg Thr	ttc Phe agt Ser	act Thr ttc Phe 30 ggc	cac His 15 atc Ile	cag Gln cct Pro	Met 1 tcg Ser ttc Phe	Thr tcg Ser tct Ser cga	Thr tca Ser tca Ser 35 tgc	tcg Ser 20 atc Ile	Pro 5 cca Pro tcc Ser	Ile ttg Leu aag Lys gcc	Ala gca Ala cgc Arg	Asn ttc Phe aat Asn 40 gat	tta Leu 25 agt Ser	
317 319 320 321 323 324 325 327 328	Pro 10 aac Asn gtc	Asn cgt Arg aat	att Ile acg Thr	ttc Phe agt Ser aat Asn	act Thr ttc Phe 30 ggc	cac His 15 atc Ile	cag Gln cct Pro	Met 1 tcg Ser ttc Phe	tcg Ser tct Ser cga Arg	Thr tca Ser tca Ser 35 tgc	tcg Ser 20 atc Ile	Pro 5 cca Pro tcc Ser	Ile ttg Leu aag Lys gcc	Ala gca Ala cgc Arg aaa Lys	Asn ttc Phe aat Asn 40	tta Leu 25 agt Ser	. 148
317 319 320 321 323 324 325 327 328 329	Pro 10 aac Asn gtc Val	Asn cgt Arg aat Asn	att Ile acg Thr tgc Cys	ttc Phe agt Ser aat Asn 45	act Thr ttc Phe 30 ggc Gly	cac His 15 atc Ile tgg	cag Gln cct Pro aga Arg	Met 1 tcg Ser ttc Phe aca Thr	tcg Ser tct Ser cga Arg 50	tca ser tca ser 35 tgc Cys	tcg Ser 20 atc Ile tcc Ser	Pro 5 cca Pro tcc Ser gtt Val	Ile ttg Leu aag Lys gcc Ala	Ala gca Ala cgc Arg aaa Lys 55	ttc Phe aat Asn 40 gat Asp	tta Leu 25 agt Ser tac Tyr	148
317 319 320 321 323 324 325 327 328 329 331	Pro 10 aac Asn gtc Val	Asn cgt Arg aat Asn	att Ile acg Thr tgc Cys	ttc Phe agt Ser aat Asn 45	act Thr ttc Phe 30 ggc Gly	cac His 15 atc Ile tgg Trp	cag Gln cct Pro aga Arg	Met 1 tcg Ser ttc Phe aca Thr	tcg Ser tct Ser cga Arg 50 ggc	tca Ser tca Ser 35 tgc Cys	tcg Ser 20 atc Ile tcc Ser	Pro 5 cca Pro tcc Ser gtt Val gcc	ttg Leu aag Lys gcc Ala	Ala gca Ala cgc Arg aaa Lys 55 gag	Asn ttc Phe aat Asn 40 gat Asp ctg	tta Leu 25 agt Ser tac Tyr	. 148
317 319 320 321 323 324 325 327 328 329 331	Pro 10 aac Asn gtc Val	Asn cgt Arg aat Asn	att Ile acg Thr tgc Cys cct Pro	ttc Phe agt Ser aat Asn 45	act Thr ttc Phe 30 ggc Gly	cac His 15 atc Ile tgg Trp	cag Gln cct Pro aga Arg	Met 1 tcg Ser ttc Phe aca Thr gac Asp	tcg Ser tct Ser cga Arg 50 ggc	tca Ser tca Ser 35 tgc Cys	tcg Ser 20 atc Ile tcc Ser	Pro 5 cca Pro tcc Ser gtt Val gcc	ttg Leu aag Lys gcc Ala gcg Ala	Ala gca Ala cgc Arg aaa Lys 55 gag	ttc Phe aat Asn 40 gat Asp	tta Leu 25 agt Ser tac Tyr	148
317 319 320 321 323 324 325 327 328 329 331 332 333	Pro 10 aac Asn gtc Val aca Thr	Asn cgt Arg aat Asn gtt Val	att Ile acg Thr tgc Cys cct Pro 60	ttc Phe agt Ser aat Asn 45 tcc Ser	act Thr ttc Phe 30 ggc Gly tca Ser	cac His 15 atc Ile tgg Trp gcg Ala	cag Gln cct Pro aga Arg gtc Val	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65	tcg Ser tct Ser cga Arg 50 ggc Gly	tca Ser tca Ser 35 tgc Cys gga Gly	tcg Ser 20 atc Ile tcc Ser ccc Pro	Pro 5 cca Pro tcc Ser gtt Val gcc Ala	ttg Leu aag Lys gcc Ala gcg Ala 70	Ala gca Ala cgc Arg aaa Lys 55 gag Glu	ttc Phe aat Asn 40 gat Asp ctg Leu	tta Leu 25 agt Ser tac Tyr gac Asp	148 196 244
317 319 320 321 323 324 325 327 328 329 331 332 333 335	Pro 10 aac Asn gtc Val aca Thr	Asn cgt Arg aat Asn gtt Val	att Ile acg Thr tgc Cys cct Pro 60 ata	ttc Phe agt Ser aat Asn 45 tcc Ser	act Thr ttc Phe 30 ggc Gly tca Ser	cac His 15 atc Ile tgg Trp gcg Ala	cag Gln cct Pro aga Arg gtc Val	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att	tcg Ser tct Ser cga Arg 50 ggc Gly	tca Ser tca Ser 35 tgc Cys gga Gly	tcg Ser 20 atc Ile tcc Ser ccc Pro	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc	Ile ttg Leu aag Lys gcc Ala gcg Ala 70 att	Ala gca Ala cgc Arg aaa Lys 55 gag Glu	ttc Phe aat Asn 40 gat Asp ctg Leu	tta Leu 25 agt Ser tac Tyr gac Asp	148
317 319 320 321 323 324 325 327 328 329 331 332 333 335	Pro 10 aac Asn gtc Val aca Thr	Asn cgt Arg aat Asn gtt Val	att Ile acg Thr tgc Cys cct Pro 60 ata	ttc Phe agt Ser aat Asn 45 tcc Ser	act Thr ttc Phe 30 ggc Gly tca Ser	cac His 15 atc Ile tgg Trp gcg Ala	cag Gln cct Pro aga Arg gtc Val	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att	tcg Ser tct Ser cga Arg 50 ggc Gly	tca Ser tca Ser 35 tgc Cys gga Gly	tcg Ser 20 atc Ile tcc Ser ccc Pro	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys	Ile ttg Leu aag Lys gcc Ala gcg Ala 70 att	Ala gca Ala cgc Arg aaa Lys 55 gag Glu	ttc Phe aat Asn 40 gat Asp ctg Leu	tta Leu 25 agt Ser tac Tyr gac Asp	148 196 244
317 319 320 321 323 324 325 327 328 329 331 332 333 335 336	Pro 10 aac Asn gtc Val aca Thr tgt Cys	Asn cgt Arg aat Asn gtt Val gtt Val 75	att Ile acg Thr tgc Cys cct Pro 60 ata Ile	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val	act Thr ttc Phe 30 ggc Gly tca Ser	cac His 15 atc Ile tgg Trp gcg Ala gca Ala	cag Gln cct Pro aga Arg gtc Val gga Gly 80	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile	tct Ser cga Arg 50 ggc Gly agt	tca Ser tca Ser 35 tgc Cys gga Gly	tcg Ser 20 atc Ile tcc Ser ccc Pro	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys 85	ttg Leu aag Lys gcc Ala gcg Ala 70 att	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala	ttc Phe aat Asn 40 gat Asp ctg Leu cag Gln	tta Leu 25 agt Ser tac Tyr gac Asp	148 196 244 292
317 319 320 321 323 324 325 327 328 329 331 332 333 335 336 337	Pro 10 aac Asn gtc Val aca Thr tgt Cys	Asn cgt Arg aat Asn gtt Val 75 tcc	att Ile acg Thr tgc Cys cct Pro 60 ata Ile	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val	act Thr ttc Phe 30 ggc Gly tca Ser gga Gly	cac His 15 atc Ile tgg Trp gcg Ala gca Ala	cag Gln cct Pro aga Arg gtc Val gga Gly 80 aat	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile ttg	tcg Ser tct Ser cga Arg 50 ggc Gly agt Ser	tca Ser tca Ser 35 tgc Cys gga Gly ggc Gly	Thr tcg Ser 20 atc Ile tcc Ser ccc Pro ctc Leu acc	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys 85 gag	ttg Leu aag Lys gcc Ala gcg Ala 70 att Ile	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala aga	Asn ttc Phe aat Asn 40 gat Asp ctg Leu cag Gln gat	tta Leu 25 agt Ser tac Tyr gac Asp gtg Val	148 196 244
317 319 320 321 323 324 325 327 328 329 331 332 333 335 336 337	Pro 10 aac Asn gtc Val aca Thr tgt Cys	Asn cgt Arg aat Asn gtt Val 75 tcc	att Ile acg Thr tgc Cys cct Pro 60 ata Ile	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val	act Thr ttc Phe 30 ggc Gly tca Ser gga Gly	cac His 15 atc Ile tgg Trp gcg Ala gca Ala	cag Gln cct Pro aga Arg gtc Val gga Gly 80 aat	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile ttg	tcg Ser tct Ser cga Arg 50 ggc Gly agt Ser	tca Ser tca Ser 35 tgc Cys gga Gly ggc Gly	Thr tcg Ser 20 atc Ile tcc Ser ccc Pro ctc Leu acc	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys 85 gag	ttg Leu aag Lys gcc Ala gcg Ala 70 att Ile	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala aga	Asn ttc Phe aat Asn 40 gat Asp ctg Leu cag Gln gat	tta Leu 25 agt Ser tac Tyr gac Asp gtg Val	148 196 244 292
317 319 320 321 323 324 325 327 328 329 331 332 333 335 336 337	Pro 10 aac Asn gtc Val aca Thr tgt Cys atg	Asn cgt Arg aat Asn gtt Val 75 tcc	att Ile acg Thr tgc Cys cct Pro 60 ata Ile	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val	act Thr ttc Phe 30 ggc Gly tca Ser gga Gly	cac His 15 atc Ile tgg Trp gcg Ala gca Ala	cag Gln cct Pro aga Arg gtc Val gga Gly 80 aat	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile ttg	tcg Ser tct Ser cga Arg 50 ggc Gly agt Ser	tca Ser tca Ser 35 tgc Cys gga Gly ggc Gly	Thr tcg Ser 20 atc Ile tcc Ser ccc Pro ctc Leu acc	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys 85 gag	ttg Leu aag Lys gcc Ala gcg Ala 70 att Ile	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala aga	ttc Phe aat Asn 40 gat Asp ctg Leu cag Gln	tta Leu 25 agt Ser tac Tyr gac Asp gtg Val	148 196 244 292
317 319 320 321 323 324 325 327 328 329 331 332 333 335 336 337 339 340 341	Pro 10 aac Asn gtc Val aca Thr tgt Cys atg Met 90	Asn cgt Arg aat Asn gtt Val gtt tval 75 tcc Ser	att Ile acg Thr tgc Cys cct Pro 60 ata Ile gct Ala	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val aat	act Thr ttc Phe 30 ggc Gly tca Ser gga Gly tac Tyr	cac His 15 atc Ile tgg Trp gcg Ala gca Ala ccc Pro 95	cag Gln cct Pro aga Arg gtc Val gga Gly 80 aat Asn	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile ttg Leu	Thr tcg Ser tct Ser cga Arg 50 ggc Gly agt Ser atg Met	Thr tca Ser tca Ser 35 tgc Cys gga Gly ggc Gly gta Val	Thr tcg Ser 20 atc Ile tcc Ser ccc Pro ctc Leu acc Thr 100	Pro 5 cca Pro tcc Ser gtt Val tgc Ala tgc Cys 85 gag Glu	ttg Leu aag Lys gcc Ala gcg Ala 70 att Ile	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala aga Arg	Asn ttc Phe aat Asn 40 gat Asp ctg Leu cag Gln gat Asp	tta Leu 25 agt Ser tac Tyr gac Asp gtg Val cgt Arg	148 196 244 292
317 319 320 321 323 324 325 327 328 329 331 335 335 336 337 340 341 343	Pro 10 aac Asn gtc Val aca Thr tgt Cys atg Met 90 gcc	Asn cgt Arg aat Asn gtt Val gtt tval 75 tcc Ser	att Ile acg Thr tgc Cys cct Pro 60 ata Ile gct Ala	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val aat Asn	act Thr ttc Phe 30 ggc Gly tca Ser gga Gly tac Tyr	cac His 15 atc Ile tgg Trp gcg Ala gca Ala ccc Pro 95 acg	cag Gln cct Pro aga Arg gtc Val gga Gly 80 aat Asn	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile ttg Leu gtg	tct Ser cga Arg 50 ggc Gly agt Ser atg Met	Thr tca Ser tca Ser 35 tgc Cys gga Gly ggc Gly gta Val	Thr tcg Ser 20 atc Ile tcc Ser ccc Pro ctc Leu acc Thr 100 gac	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys 85 gag Glu ggc	ttg Leu aag Lys gcc Ala gcg Ala 70 att Ile gcg Ala	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala aga Arg	Asn ttc Phe aat Asn 40 gat Asp ctg Gln gat Asp	tta Leu 25 agt Ser tac Tyr gac Asp gtg Val cgt Arg 105 gaa	148 196 244 292 340
317 319 320 321 323 324 325 327 328 329 331 332 333 335 336 337 340 341 343 344	Pro 10 aac Asn gtc Val aca Thr tgt Cys atg Met 90 gcc	Asn cgt Arg aat Asn gtt Val gtt tval 75 tcc Ser	att Ile acg Thr tgc Cys cct Pro 60 ata Ile gct Ala	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val aat Asn	act Thr ttc Phe 30 ggc Gly tca Ser gga Gly tac Tyr	cac His 15 atc Ile tgg Trp gcg Ala gca Ala ccc Pro 95 acg	cag Gln cct Pro aga Arg gtc Val gga Gly 80 aat Asn	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile ttg Leu gtg	tct Ser cga Arg 50 ggc Gly agt Ser atg Met	Thr tca Ser tca Ser 35 tgc Cys gga Gly ggc Gly gta Val	Thr tcg Ser 20 atc Ile tcc Ser ccc Pro ctc Leu acc Thr 100 gac	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys 85 gag Glu ggc	ttg Leu aag Lys gcc Ala gcg Ala 70 att Ile gcg Ala	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala aga Arg	Asn ttc Phe aat Asn 40 gat Asp ctg Leu cag Gln gat Asp	tta Leu 25 agt Ser tac Tyr gac Asp gtg Val cgt Arg 105 gaa	148 196 244 292 340
317 319 320 321 323 324 325 327 328 329 331 335 336 337 340 341 343 344 345	Pro 10 aac Asn gtc Val aca Thr tgt Cys atg Met 90 gcc Ala	Asn cgt Arg aat Asn gtt Val gtt Yal 75 tcc Ser ggt Gly	att Ile acg Thr tgc Cys cct Pro 60 ata Ile gct Ala ggc Gly	ttc Phe agt Ser aat Asn 45 tcc Ser gtt Val aat Asn aac	act Thr ttc Phe 30 ggc Gly tca Ser gga Gly tac Tyr ata Ile	cac His 15 atc Ile tgg Trp gcg Ala gca Ala ccc Pro 95 acg Thr	cag Gln cct Pro aga Arg gtc Val gga Gly 80 aat Asn act	Met 1 tcg Ser ttc Phe aca Thr gac Asp 65 att Ile ttg Leu gtg Val	Thr tcg Ser tct Ser cga Arg 50 ggc Gly agt Ser atg Met gaa Glu	Thr tca Ser tca Ser 35 tgc Cys gga Gly ggc Gly gta Val aga Arg 115	Thr tcg Ser 20 atc Ile tcc Ser ccc Pro ctc Leu acc Thr 100 gac Asp	Pro 5 cca Pro tcc Ser gtt Val gcc Ala tgc Cys 85 gag Glu ggc Gly	ttg Leu aag Lys gcc Ala gcg Ala 70 att Ile gcg Ala tat Tyr	Ala gca Ala cgc Arg aaa Lys 55 gag Glu gcg Ala aga Arg ttg Leu	Asn ttc Phe aat Asn 40 gat Asp ctg Gin gat Asp	tta Leu 25 agt Ser tac Tyr gac Asp gtg Val cgt Arg 105 gaa Glu	148 196 244 292 340

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/508,418 TIM

DATE: 05/21/2001 TIME: 09:51:00

Input Set : A:\Q58140.txt

Output Set: N:\CRF3\05212001\I508418.raw

 $L:10\ M:271\ C:$ Current Filing Date differs, Replaced Current Filing Date